

REMARKS**I. Introduction**

In response to the pending Office Action, Applicants have amended claims 34 and 43 so as to further clarify the intended subject matter of the present invention. No new matter has been added. For the reasons set forth below, Applicants respectfully submit that the pending claims are patentable over the cited prior art references.

II. The Rejection Of Claims 34-36 And 38-45 In View Of Mayumi

Claims 34-36 and 38-45 were rejected under 35 U.S.C. § 102(b) as being anticipated by JP61-287151 to Mayumi. Applicants respectfully submit that, as amended, claims 34 and 43 are not anticipated by Mayumi.

As recited by amended claim 34, the present invention relates to a semiconductor device comprising: a substrate 1 having a semiconductor region; an insulating film 3 having impurities formed over the semiconductor region; an interconnection 4 disposed on and in contact with a first region of the upper surface of the insulating film 3; a silicon oxide film 5 in contact with a second region of the upper surface of the insulating film 4, where the silicon oxide film 5 does not include the impurities; and a silicon nitride film 6 formed on the silicon oxide film 5.

Claim 43, as amended, is similar to claim 34, with the difference being that claim 43 recites that the insulating film includes phosphorus, and that the silicon oxide film does not include phosphorus.

Turning to the cited prior art, referring to Fig. 1 of Mayumi, this reference discloses a semiconductor device having a silicon substrate 1, a PSG film 2 formed on the silicon substrate 1, a wiring layer 3 formed in contact with a first region of the PSG film 2, another PSG film 4 formed in contact with a second region of the PSG film 2, and a silicon nitride film 5 formed on

the PSG film 4. It is asserted that the PSG film 4 of Mayumi corresponds to the claimed silicon oxide film. However, as is clear, the PSG film 4 of Mayumi includes impurities consisting of phosphorus. Mayumi further states that a silicon glass film including impurities such as boron and arsenic can be utilized instead of the PSG film. In contrast, the silicon oxide film of the present invention does not include impurities such as phosphorus. Thus, at a minimum, Mayumi fails to disclose this element of amended claims 34 or 43.

It is also noted Mayumi does not appear to disclose or appreciate the problem solved by the present invention, which is the occurrence of wrinkle or cracks in the silicon nitride film. As explained in the specification of the present invention, this problem can be prevented by forming a silicon oxide film having no impurities between an insulating film having impurities and the silicon nitride film.

As anticipation under 35 U.S.C. § 102 requires that each element of the claim in issue be found, either expressly described or under principles of inherency, in a single prior art reference. *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 218 USPQ 781 (Fed. Cir. 1983), for the foregoing reasons, it is clear that Mayumi does not anticipate amended claim 34 or 43, or any claim dependent thereon.

III. The Rejection Of Claims 34-43 And 48 In View Of Ueda

Claims 34-43 and 48 were rejected under 35 U.S.C. § 102(b) as being anticipated by USP No. 5,545,919 to Ueda. Applicants respectfully submit that, as amended, claims 34 and 43 are not anticipated by Ueda.

Referring to Fig. 11 of Ueda, Ueda discloses a device having a semiconductor substrate 10, a BPSG film 14 formed on the substrate, a metal interconnection 3 in contact with a region of the BPSG film 14, a PSG film 1 in contact with a second region of the BPSG film 14, and a

silicon nitride film 2 formed on the PSG film 1. It is asserted in the Office Action that PSG film 1 corresponds to the recited silicon oxide film.

However, similar to Mayumi, the PSG film 1 of Ueda includes impurities such as phosphorus. Thus, at a minimum, Ueda also fails to disclose or suggest the use of the claimed silicon oxide film having no impurities.

Once again, as anticipation under 35 U.S.C. § 102 requires that each element of the claim in issue be found, either expressly described or under principles of inherency, in a single prior art reference. *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 218 USPQ 781 (Fed. Cir. 1983), for the foregoing reasons, it is clear that Ueda does not anticipate amended claim 34 or 43, or any claim dependent thereon.

IV. All Dependent Claims Are Allowable Because The Independent Claims From Which They Depend Are Allowable

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as claim 34 and 43 are patentable for the reasons set forth above, it is respectfully submitted that all pending dependent claims are also in condition for allowance.

V. Request For Notice Of Allowance

Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication for which is respectfully solicited.

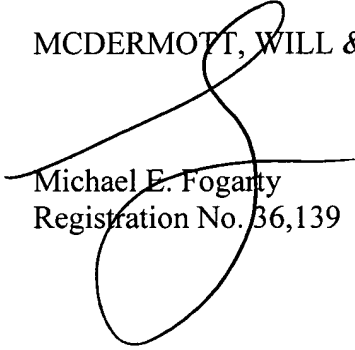
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If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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